

Code No: 157AQ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, July/August - 2022****AUTOMOBILE ENGINEERING****(Mechanical Engineering)****Time: 3 Hours****Max. Marks: 75****Answer Any Five Questions
All Questions carry equal marks**

- 1.a) Explain classification of a vehicle chassis is based on the position of the engine on the chassis.
- b) With a neat sketch, explain the electronically controlled gasoline injection system for SI engine. [7+8]
- 2.a) Explain in detail about the various types of pistons with neat sketches.
- b) Explain the working principle of turbo charger with neat sketch. [8+7]
- 3.a) Describe the construction and working principles of electronic ignition system.
- b) With the help of line diagram, explain the working of liquid cooling system. [8+7]
4. Explain the function and working of following electrical system.
 - a) Horn
 - b) Wiper
 - c) Fuel gauge
 - d) Oil pressure gauge
 - e) Engine temperature indicator. [15]
5. Explain the following with neat diagram
 - a) king pin inclination
 - b) Caster and Camber
 - c) Toe -in and Toe-out. [5+5+5]
- 6.a) Explain the construction and working of a differential box with neat sketch.
- b) Explain the single plate clutch with neat sketch. [8+7]
- 7.a) Describe the mechanical brake system with neat sketch.
- b) Explain the Ackerman principle of steering with neat sketch. [8+7]
8. Discuss in detail about different alternate fuels for automotive engines with respect to the following aspects:
 - a) Emission
 - b) Cost
 - c) Reliability
 - d) Availability
 - e) Engine modifications needed. [15]

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